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Synonymical notes on COLEOPTERA of the United States, with descriptions of new species, from the MSS. of the late Dr. C. Zimmermann.

EDITED BY JOHN L. LECONTE, M. D.

CARABIDÆ.

1. *Metabletus borealis* Zim.—Long. $1\frac{1}{2}$ lin. Black, very similar to *M. americanus*, but easily distinguished by the prothorax, which is transversely quadrate, only slightly narrowed behind, with broadly reflexed hind angles.—Lake Superior.

[Dr. Zimmermann united with *Metabletus* both *Apristus* and *Blechnus*, with the following remarks:]

“The fundamental character of generic similarity, *resemblance in form of body*, belongs to all species mentioned below, which form a very natural group, easily distinguished from *Dromius*, with which it was formerly united; of the divisions which may be recognized among these species, some (*Apristus*, *Blechnus*) have been separated as distinct genera, although they must, by the want of primary generic right (*Gattungsrechte*), as well as by the absence of permanence in the secondary generic characters, fall again into the central group.”

[The divisions alluded to above, are then arranged as follows:]

- A. Head elongated, narrowed behind:
 - a. Elytra scarcely shorter than the abdomen, but slightly truncate.—(*Variopalmus* Sol.)
 - b. Elytra shorter than the abdomen.—(*Oxoides* Sol.)
- B. Head shorter, not obviously narrowed behind:
 - c. Peduncle of prothorax strongly projecting; elytra rectilinearly truncate behind; (emargination of mentum without prominent tooth).—(*Blechnus* Schaum; *Bomius* Lec.; *Microlestes* Schmidt-Goebel.)
 - d. Peduncle of prothorax strongly projecting; elytra feebly sinuate at the posterior truncation; (emargination of mentum with prominent tooth.) (*Metabletus* Schaum; *Dromoceryx* Schmidt-Goebel; *Syntomus* Hope.)
 - e. Peduncle of prothorax very feebly prominent; tip of elytra scarcely sinuate; (emargination of mentum with a prominent tooth).—*Apristus* Chaud.

2. *Cymindis brevipennis* Zimm.—Long. 4— $4\frac{1}{2}$ lin. Ferruginous, elytra dark brown, with greenish metallic gloss; palpi, antennæ, legs, a humeral spot, and the side margin of the elytra testaceous yellow. Head and prothorax thickly and coarsely punctured; the latter cordate, with broadly reflexed side margin, and almost rectangular slightly projecting hind angles. Elytra unusually short, slightly convex, with punctured striæ, intervals with double rows of punctures; the 3rd interval with scarcely discernable dorsal punctures.—Kansas.

LeConte (Ann. Lyc. Nat. Hist. N. York, iv, 186) has erroneously considered this species as *C. cribricollis* Dej.

[I learn by a recent letter from Baron Chaudoir that this species, from the vicinity of the Rocky Mountains, is not *cribricollis* Dej. as I formerly regarded it, but one thus far unnamed. Dejean's species is identical with *C. marginata* Kirby and *reflexa* Lec., and occurs in the most northern part of the United States and in Canada.]

3. **Platynus rubripes** Zimm.—Long. 3—3½ lin. Of the form of *P. punctiformis*, but smaller, with large deep basal impressions of the prothorax, and yellow-ferruginous legs. Shining black, smooth; palpi and antennæ testaceous, basal joint of the latter yellowish-red. Prothorax almost as long as wide, with rounded hind-angles, near which the broad basal impressions are marked with a small deep fovea. Elytra formed and sculptured as in *P. punctiformis*, but narrower towards the base, so that the humeri are more angular, while in *punctiformis* they are rounded.

This insect, omitted by LeConte in his Synopsis of Platyni, or perhaps confused with *punctiformis*, must be properly received as a separate species. It occurs, but not frequently, in the region north of the Potomac, while the species just named is very abundant in the Southern States.

[The bad condition of the specimens in my collection prevented me from describing this species as distinct, when I wrote the Synopsis.]

4. **Platynus lenis**, (*Ag. lenum* Dej.)=*P. retractus* Lec.

[The arrangement of the species of *Platynus* for which, on account of the confusion in the names previously used, Dr. Zimmermann proposed the name *Psilopodius*, seems so far superior in some respects to that adopted by me, that although I have not had leisure to test it by a re-examination of all my species, I think it well worthy of being presented:]

- A. Prothorax cordate, or quadrate, with well defined hind angles; pubescence of antennæ beginning on the 4th joint:
 - a. All the joints of the tarsi without longitudinal grooves.—(*oblongus* of Europe.)
 - b. Only the front tarsi, ♂ ♀, without grooves.—(*Platynus* Bon.)
 - c. All the tarsi with grooves.—(*Anchomenus* Bon.)
- B. Prothorax rounded, or obtuse angled; pubescence of antennæ commencing with the 4th joint.—(*Agonum* Bon.)
 - d. Prothorax broader than long, with depressed side margins which are reflexed behind.
 - e. Prothorax broader than long, with narrowly beaded side margins.
 - f. Prothorax small, elongate oval, with narrowly beaded side margins.
- C. (g.) Prothorax rounded, or elongate oval; pubescence of the antennæ beginning on the tip of the 3rd joint.—(*Euophilus* Chaud.)

The species A—b group themselves as follows :

- a. Winged species with strongly curved claws : (*decens*, *sinuatus*, *blandus* &c.)
- b. Winged species with regularly curved claws : (*angusticollis* of Europe.)
- c. Apterous species with regularly curved claws : (*angustatus* &c.)

Those of A—c may be grouped thus : according as the tarsi have a middle groove besides the lateral ones, and the mentum tooth is longitudinally impressed at tip, so as to appear slightly divided, or altogether simple and pointed :

Series I. Tarsal joints without medial groove ; upper surface of body pubescent :

Group A. With lateral grooves on the first three joints of the middle and hind tarsi :

- a. Mentum tooth broad, obtuse, and simple.—(*Orthotrichus* Peyr.) (*P. cymindoides* of Egypt.)

Series II. Tarsal joints without medial groove ; upper surface of body glabrous :

Group A. Lateral grooves of the first three joints of middle and hind tarsi always evident :

- a. Mentum tooth somewhat cleft.—(*bicoloratus* Zimm. = *bicolor* || Lec. : *brunneomarginatus*.)

- b. Mentum tooth smooth and simple.—(*extensicollis*, *devorus*.)

Group B. Lateral grooves of all the tarsi very feeble, in some specimens not apparent :

- a. Mentum tooth smooth and simple.—(*prasinus* of Europe.)

Series III. All five tarsal joints with a medial groove ; upper surface of body glabrous :

Group A. First four joints of hind and middle tarsi with lateral grooves :

- a. Elytra with 3 dorsal punctures.—(*funbris* Lec.)
- b. Elytra with 2 dorsal punctures.—(*albipes* of Europe.)

The species of division B—d have for the most part only lateral grooves on the basal joints, though sometimes the middle groove is also present. By this character and by the form of the claws, aided by the color of the elytra, they may be grouped as follows :

Series I. Tarsi with a medial groove ; claws regularly curved :

Group A. First three joints of middle and hind tarsi with lateral grooves :

- a. Elytra with three dorsal punctures.—(*subcordatus* Lec.)

Series II. Tarsi without medial groove ; claws regularly curved :

Group A. First three joints of middle and hind tarsi with lateral grooves ; elytra margined with yellow :

- a. Elytra with 4 or more dorsal punctures.—(*maculicollis*, *variolatus*.)

- b. Elytra with only 3 dorsal punctures.—(*marginatus* of Europe.)

Group B. First three joints of middle and hind tarsi with lateral grooves, elytra without yellow margin :

- a. Elytra with 4 or more foveæ on the 3rd interval.—(*8-punctatus*.)

- b. Elytra with 4 or more dorsal punctures.—(*deplanatus*, *placidus*, *chalcus*.)

- c. Elytra with 3 dorsal punctures.—(*excavatus*, *cupripennis*, *metallascens*.)

Group C. First four joints of middle and hind tarsi with lateral grooves; elytra without yellow margin:

- a. Elytra deeply striate, with 4 or more dorsal punctures.—(*fossiger*.)
- b. Elytra deeply striate, with 3 dorsal punctures, the 1st and 2nd near the 3rd stria.—(*melanarius*, *lucis*.)
- c. Elytra finely striate, with 3 dorsal punctures, the 2nd and 3rd near the 2nd stria.—(*collaris*, *Harrisii*, *dirianus* *Zimm.)

Series III. Tarsi without medial groove; claws bent somewhat backwards. (*Scricoda* Kirby, *Rhytiderus* Chaud.)

Group A. Lateral grooves of tarsi very faint, sometimes visible only on the basal joint:

- a. Elytra with 3 dorsal punctures.—(*obsoletus*.)
- b. Elytra with foveæ on the third interval.—(*bembidioides*, *stigmatosus*.)

The species of division B—c have but three dorsal punctures, which in general are not connected with the striæ, but stand free upon the 3rd interval; but few are thus far known, which may be grouped thus:

Series I. Tarsi without medial groove:

Group A. Tarsi without distinct lateral grooves.—(*limbatus*.)

Group B. First three joints of middle and hind tarsi with fine lateral grooves.—(*punctiformis*, *rubripes* Zimm.)

Division B—f presents no special characters for grouping the species, of which *æruuginosus* and *striatopunctatus* may be taken as examples.

In the species of C—g the lateral grooves of the first three joints of the middle and hind tarsi are visible, but finer than usual; according to the form of the prothorax the following groups are indicated:

- a. Prothorax nearly quadrate, or feebly cordate, with distinct though obtuse hind angles.—(*micans* &c. of Europe.)
- b. Prothorax rounded oval, without distinct hind angles.—(*lenis*, *picipennis*, *lutulentus*.)

DICÆLUS.—The species may be arranged as follows:

A. Upper surface violet, or copper colored:

- a. Left mandible with a tubercle on the inner margin:—1. *purpuratus*; 2. *chalybeus*; 3. *violaceus*, (*cyaneus* Dej. *confusus* Lec.); 4. *iricolor* Lec. 5. *splendidus*.

B. Upper surface pure black:

- b. Both mandibles without tubercles.
 - a. Elytra deeply striate, 2nd, 4th and 6th interval interrupted by annular punctures: 6. *sculptilis*.
 - b. Elytra deeply striate, all the intervals smooth: 7. *dilatatus* (of which *Dejeanii* is a larger Southern race,) 8. *elongatus*.
- c. Left mandible tuberculate at the middle: 9. *furvus*.
- d. Right mandible tuberculate on the outer margin: 10. *teter*. 11. *politus* Dej. (*Leonardi* Harris.)

[* I think this is merely an individual variation of *marcens* Dej.]

[I would observe in addition, that while *D. lævipennis* has the upper surface tinged with violet it differs from all the other species, not only by the feebly striate elytra, but by the labrum being much less emarginate; both mandibles are without tubercles; the names attributed to Nos. 8 and 9 do not seem to agree with my determinations of the same species.]

Feronia carbonaria Dej. Sp. Gen. iii, 283.—LeConte has twice mistaken this species: 1st he placed it (Ann. Lyc. iv, 336) as synonymous with *caudicalis* Say, which is an *Hypherpes*, and afterwards, (Journ. Ac. Nat. Sc. Phil. 2nd, ii, 243) as *luctuosa* Dej, which is equivalent to *P. abjectus* Lec.

[The name *carbonaria* has been inadvertently omitted in my List, and it is really a synonym of *muta* Say, as determined by Baron Chaudoir (vide infra); the confusion in my mind with regard to *F. luctuosa* Dej., which as I was afterwards informed by Baron Chaudoir (Say's Entom. Writings, ed. Lec. ii. 480) is the same as my *P. abjectus*, resulted from the fact that the description of Dejean will apply equally to both species; *carbonaria* cannot be referred to the present species since the description states that the outer stria of the basal impression is wanting; it is in *caudicalis* short, and very close to the carina of the angle, which is more distinctly defined than in the smaller species, *P. luctuosus*. About *F. caudicalis* Say, I may observe that Dr. Harris gave me specimens of the species under consideration, as having been compared with Say's type; moreover the expression "space of the basal angles depressed and punctured," and the fact that the insect is winged, absolutely forbid the reference of Say's description to any species of *Hypherpes*. The synonymy as printed in my List is therefore correct.]

Selenophorus parumpunctatus Dej. iv, 104. [This species, described by Dejean as being perhaps from the West Indies, has been identified by Dr. Zimmermann as the common small Southern species, *S. fatuus* Lec., New Spec. Col. (Smiths, Inst.), 17.]

Ochthedromus pardalis Zim. = *O. laticollis* || Lec. Ann. Lyc. Nat. Hist. New York, v, 187. California.

Ochthedromus littoralis.—*Carabus litt.* Panzer, Fauna, 40, 6. *Elaphrus rupestris* Fabr. &c. *Bembidium andrææ* Er. &c. *B. tetracolum* Say.

Ochthedromus plagiatus Zim.—Length 2 lines. Somewhat larger than *O. niger*, but of the same general form; dark-green, black beneath; mouth, base of antennæ, and legs ferruginous-yellow; frontal grooves parallel, simple, deep; prothorax cordate, strongly narrowed behind, with rectangular hind angles, rugosely punctured at the hind margin, with deep basal impressions, and distinct carina at the angle. Elytra convex, much broader than the prothorax, with 7 strongly punctured dorsal striæ, which are obliterated behind, and marked in front of the tip with a large common reddish-yellow oblique spot.—Maryland.

[Seems to resemble *B. bimaculatum* but is smaller; *B. gelidum* is also related to it but is much more slender and smaller.]

Ochthedromus lacunarius Zim.—Length $2\frac{1}{2}$ lines. Piceous with slight metallic lustre; palpi, antennæ and legs ferruginous; head elongate, with deep frontal grooves, and tolerably flat eyes. Prothorax short cordate, very smooth, strongly narrowed behind, with rectangular hind angles; basal impressions deep, with a sharp carina near the angle, but not punctured at the middle; elytra with 6 punctured dorsal striæ, of which only the sutural reaches the tip; the 7th stria is entirely wanting, but the 5th becomes again distinct at the tip, and therefore appears interrupted.—Middle States. [I have determined this species, probably incorrectly, as *Peryphus picipes* Kirby, but fortunately without publishing any remarks which can confuse the synonymy.]

Ochthedromus assimilis.—*Bembidium ass.* Gyll., Dej., &c.=*O. frontalis* Lec. Ann. Lye. Nat. Hist. N. York, iv, 462.—Europe and North America.

TACHYS. [Several species are described in the MSS. of Dr. Zimmermann, but I have not leisure to collate them with those recently described by Baron Chaudoir, Rev. and Mag. de Zoologie, 1868. In consequence of the descriptions of the species being scattered through several works, some of which are of difficult access, a synopsis of them would be very useful.*]

* This would appear a convenient place to record some interesting and important remarks on the synonymy of North American Carabidæ recently communicated to me by Baron Chaudoir, with the kind permission to make such use of them as I judged best for the interest of science.

1. *Lebia cupripennis* Boheman.=*cupripennis* Chaud; not Californian, but found in Peru and Chili.

2. *Lebia cyanella* Motsch.=*smaragdina* Dej.

3. *Lebia marginicollis* Dej.=*affinis* Dej.

4. *Lebia ornata* Say, type and Var. α .=*arillaris* Dej.

5. *Lebia ornata* Say, var. β .=*analis* Dej. (head corrugated.)

6. *Lebia marginella* Dej.=*axillaris*, (immaculate variety.)

7. *Lebia nigripennis* Dej. is not a variety of *collaris* Dej.

8. *Lebia cyanea* Dej.=*smaragdina* Dej. (blue variety.)

9. *Cymindis reflexa* Lec.=*cribricollis* Dej.

10. *Cymindis cribricollis* ‡ Lec. is a very distinct new species near *laticollis*. (vide supra.)

11. *Cymindis venator* Dej. My two specimens are much larger than *americana*, and the prothorax is not at all narrowed behind.

12. *Callida cyanipennis* Chaud.=*smaragdina* Dej.

13. *Agonum nitidulum* Dej.=*cupripenne* (dark colored variety.)

14. *Agonum brevicolle* Dej.=*Platynus frater* Lec.

15. *Agonum cupreum* Dej.=*A. chalcum* Lec.

16. *Agonum striatopunctatus* Dej.=*O. crenulatus* Lec.

17. *Agonum decipiens* and *striatopunctatum* ‡ Lec. belong to another species.

18. *Agonum octocolus* Mannh.=*stigmatus* Lec.

19. *Agonum sordens* Kirby.=*P. retractus* Lec.

20. *Agonum lenum* Dej.=*picipenne* Kirby, var. c .

21. *Omasus fuscoeneus* Chaud.=*riparius*, (pale variety.)

HYDROPHILIDÆ.*

HELOPHORUS.—The species of this genus may be grouped as follows:

A. Second joint of hind tarsi obviously longer than the 3rd; elytra without scutellar stria.—(e. g. *lineatus* and all other N. American species except *scaber*.)

B. Second joint of hind tarsi obviously longer than the 3rd; elytra with distinct scutellar stria near the suture.—(e. g. *grandis* of Europe.)

C. Second joint of hind tarsi not longer than the 3rd; elytra with distinct scutellar stria near the suture.—(e. g. *scaber*.)

Hydrochus impressus Zimm.—Long. $1\frac{1}{4}$ — $1\frac{3}{4}$ lines. Above coppery green or blackish, beneath brown; prothorax broader than long, shallowly foveate, deeply but not confluent punctured; intervals of the elytra slightly convex, almost as wide as the striæ, 5th depressed at the middle, but both in front of, and behind the impression elevated, as is also the 4th opposite to the impression. Carolina. [A distinct species near *variolatus* Lec. but among other differences with wider and less deeply impressed prothorax.]

Hydrochus vagus Lec.—Specimens of this species undistinguishable from those collected in California have occurred in South Carolina.

Berosus immaculatus Zimm.—Long. $1\frac{1}{4}$ — $1\frac{1}{2}$ lines. Above grayish-yellow; beneath and legs ferruginous-yellow; head and two spots on the front margin of the prothorax metallic-green; mouth and clypeus yellowish. Smaller and narrower than [*aculeatus* Lec.], with the head and prothorax more equably punctured; front with a shallow fovea, and no posterior elevated longitudinal line; elytra immaculate, pointed behind, with the striæ and intervals distinctly punctured.—Carolina. [Also found in Illinois.]

Hydrophilus nimbatus Say.—Differs from the South American *lateralis* Fabr.: the yellow side margin is narrower and does not extend upon the front margin of the prothorax; the hind tibiæ are often almost entirely testaceous, the elytra very finely, but visibly striate, and the anal tooth long and sharp, (in *lateralis* scarcely visible).

[If this determination be correct, as I have no reason to doubt, with the specimens before me, then the Californian *H. limbatis* approaches more nearly to the Brazilian *lateralis* in the yellow margin being wider

22. **Feronia carbonaria** Dej.=*muta* Say.

23. **Myas cyanescens** Dej.=*foveatus* Lec. and not *coracinus* Say.

24. **Cratocara** Lec.=**Polpochile** Solier.=*Melanotus* ♂ Dej. The name given by Solier should be adopted, in preference to the two others.

Upon these synonyms, which constitute a most important addition to our bibliography, since they dispose of many doubtful or unknown species mentioned in my List, I have merely to observe that they differ in three instances (Nos. 19, 20 and 22) from the determinations of Dr. Zimmermann as contained in the MSS. above printed, but must be regarded as entirely final and conclusive, having been founded upon actual comparison of typical specimens, while the results both of Dr. Zimmermann and myself were obtained from the study of descriptions, often perhaps too imperfect or ill-defined to be of much value.

* No reference is here made to the MSS. relating to Dytiscidæ and Gyrinidæ, as I am now occupied in preparing special memoirs upon those families.—Lec.

and more or less extended along the apical margin of the prothorax. but recedes from it and agrees with our *nimbatus* in the small cusp near the tip of the last ventral segment (anal tooth) being prominent and acute.]

Hydroporus striolatus Lec. = *H. lateralis* ‡ Herbst. [This synonymy is correct, and that printed in my List is wrong.]

Hydrocharis grandis Zimm.—Long. 8 lines This species differs from *caraboides* and *obtusatus* by the elytra being more pointed behind, with the rows of punctures extremely fine, not becoming more obvious towards the tip, as is the case in each of those species.—South Carolina. [But two elytra remain of this species, which seems quite distinct by its greater size.]

Philhydrus pygmeus. = *Hydrophilus pygm.* Fabr. Ent. I, 186. = *H. nebulosus* Say, Long's Exp. 2, 277.

Philhydrus reflexipennis Zimm.—Long. 1½—2 lines. Elongate oval, yellowish-brown, beneath blackish, upper surface very distinctly and thickly punctured; elytra behind with strongly depressed, almost reflexed margin.—New Jersey. [Very closely allied to *H. perplexus* Lec., but smaller, with more strongly margined elytra, and more prominent and acutely pointed mesosternal carina.]

Philhydrus nitens Zimm.—Long. 2½ lines. Black, margined with yellow, beneath and legs brown; form size and color as in *H. cinctus*, but the upper surface is more feebly punctured, and very shining; the mentum is shorter and broader, and the prominence of the mesosternum short and placed transversely.—North Carolina.

Philhydrus semistriatus Zimm.—Long. 1½—2 lines. Black, prothorax and elytra margined with ferruginous-yellow, body oval, distinctly punctured, elytra towards the tip distinctly punctate striate.—Maryland. [In this species too, the mesosternum is not carinate, but transversely prominent.]

Cyclonotum semiglobosum Zimm.—Long. 1—1½ lines. Shining black, palpi and feet testaceous; head and prothorax almost smooth; elytra distinctly and thickly punctured, without any striæ.—Carolina. [This species is allied to *estriatum*, but differs by its broader and more rounded form.]

Cercyon naviculare Zimm.—Long. ¾ line. Black, with a slight bronzed reflexion, shining, reddish translucent at the suture and side margin of the elytra; palpi, antennæ and legs yellow; prothorax smooth, side margins somewhat converging in front; elytra very evidently compressed, pointed behind, finely punctured, with 11 fine rows of punctures becoming indistinct towards the tip, suture elevated behind.—Middle States.

Cercyon melanocephalum. = *Dermestes melan.* Linn. = *Sphæridium apicalis* Say, Jour. Acad. Nat. Sc. iii, 203.

Cercyon pygmæum. = *Sphæridium pygm.* Illiger. Found both in Europe and North America.

RHYPOPHAGA.

Cyrtusa blandissima Zim.—Long. ¾ line. Ferruginous, shining; front finely punctured; prothorax behind not wider than in front, somewhat emarginate at tip, with the sides slightly deflexed, but only feebly rounded, the front angles therefore are nearly rectangular, disc feebly impressed and very finely punc-

tured both before and behind. Elytra with tolerably coarse rows of punctures, the sutural stria more deeply impressed; pectus distinctly and thickly punctured.—North Carolina.

Cyrtusa impubis Zim.—Long. $\frac{3}{4}$ line. Much smaller than the preceding species, broadly elliptical, very convex, ferruginous, smooth, shining; prothorax entirely smooth, at tip feebly emarginate, narrowed in front, side margins not deflexed, and therefore between the obtuse front and hind angles more rounded than in the preceding species. Elytra with very fine rows of punctures, which are almost obliterated in front. Pectus finely punctured.—North Carolina. [Mr. Ulke has found this species in the District of Columbia.]

Toxidium compressum Zim.—Long. $\frac{3}{4}$ — $\frac{7}{8}$ line. Of the same form and color as *gammaroides*, and equally smooth above, but somewhat smaller, and still more compressed, and easily distinguished by the coarse punctures of the pectus. The structure of the prothorax is very singular, the side margin is slightly prominent and carinate in front, but behind the middle, is pressed closely to the body, and therefore the impressed line of the marginal bead disappears, the margin itself where it meets the epimeron of the mesothorax forms a distinct angle, and causes the hind angles, which would otherwise be acute, to appear rounded.—Louisiana. [I have specimens of this species from Texas, Florida and Illinois.]

Scydmaenus mississipicus Zim.—Nearly $\frac{3}{4}$ lin. long. Ferruginous-brown, very shining, and smooth, although tolerably thickly clothed with hair, the head especially thickly covered behind with erect hairs; prothorax not longer than wide, narrowed in front, with slight transverse impressions behind, in which four deep foveæ are visible; elytra with one longitudinal impression in front near the suture, and a fovea near the sharply defined humeral carina; front thighs much thickened, front tibiæ strongly compressed towards the tip, and on the inner side furnished with a brush of hairs.

[The MS. of Dr. Zimmermann relating to the Scydmaenidæ is prefixed by a brief treatise upon the classification of the RHYPHAGA, from which the following extracts are made, with the expectation that the suggestions contained therein may be useful to other students. After reviewing the relations in which the families of the series have been placed by Erichson, Lacordaire, Redtenbacher, Duval, and the editor, he proceeds to eliminate and transfer the following families: the Pselaphidæ, Claviger, and Staphylinidæ to form another series, BRACHELYTRA; the Phalacridæ and Telmatophilidæ to the series CORDYLOCERA; the Rhyssodidæ, Passandridæ and Cucujidæ to the series ISOMERA (XENOMORPHA), and also the Georyssidæ, Parnidæ, and Heteroceridæ, to the series PHILYDRIA. The families of Rhypophaga are then distinguished as follows:]

A. Wings membranous, with distinct veins, and mostly suitable for flight; ventral segments 5 or less in number:

- a. Ventral segments 4; tarsal joints variable in form and length,.....**Paussidæ.**
- b. Ventral segments 5; tarsal joints narrow:

Hind coxæ not excavated for the reception of the thighs; pygidium always exposed,.....**Histeridæ.**

Hind coxæ not excavated for the reception of the thighs; pygidium not exposed,.....**Mycetophagidæ**.*

Hind coxæ excavated for the reception of the thighs,.....**Dermestidæ**.†

c. Ventral segments 5; first 3 joints of the tarsi dilated,.....**Nitidulidæ**.‡

B. Wings membranous, with distinct veins, and mostly suitable for flight, but in some genera wanting, or undeveloped; ventral segments 6 or more in number:

a. Elytra with distinct veins,.....**Silphidæ**.

b. Elytra without veins:

Prothorax shield shaped, with sharply defined side margins...**Anisotomidæ**.

Prothorax rounded or cylindrical, without margined sides.....**Scydmanidæ**.

Platysoma æquum Lec. N. Sp. Col. 1, 61.—This is the *Hister frontalis* || Say, which would with difficulty be recognized from Say's description unless a specimen were present (*in natura*) for comparison. The body is parallel in form, black, the antennæ and legs red, the club of the antennæ ferruginous, the front is flat, not impressed, thickly and finely, though quite distinctly punctured, with the anterior part raised above the clypeus, and surrounded by a fine marginal stria: the clypeus is therefore very short, (or as Say has expressed it, *linear* ‡). Prothorax transverse, quadrate, thickly punctured, with distinct marginal stria, which extends along the front margin, and with a small basal fovea at the middle. The elytra have 6 entire dorsal striæ, and no lateral stria; the epipleuræ are flat, narrow, scarcely punctured; pygidium and propygidium coarsely punctured; the middle of the under surface thickly and finely punctured; mesosternum not margined in front; front tibiæ 4-toothed. [I failed to recognize Say's species in this remarkable insect, believing with my father that we had determined it in another which more nearly resembles in form *P. parallelum* with which Say compares it.]

Hister servus Er.—Very similar to *indistinctus* Say, but easily distinguished by the pygidium which is very coarsely punctured.—Maryland, Cuba, Hayti. [Not before noted as occurring in the United States.]

Hister permixtus Zim.—Long. $1\frac{1}{2}$ line. Also an allied species to *servus*, very similar to *indistinctus*, but entirely of a brown color, and distinguished by the following characters: exterior stria of prothorax abbreviated or interrupted at the middle: marginal stria of the elytra deeper and dilated in the form of a fovea, (grubenförmig); pygidium sparsely and very finely punctured; front tibiæ 4-toothed, the lowest tooth broadly divided.—Carolina.

Hister corvinus Germ.—Long. $1\frac{1}{2}$ — $1\frac{3}{4}$ line. Antennæ and legs ferruginous;

* Here belong also the Colydiidæ, Cryptophagidæ, Trogositidæ, Peltidæ, Thorictidæ, Mycetæidæ, Murmididæ, Lathridiidæ, Monotomidæ, Derodontidæ, and Othniidæ of other authors.

† Including Byrrhidæ and Throscidæ.

‡ [This table, although written recently, appears to be partly provisional; in another MS. the Nitidulidæ are placed near the Phalacridæ, Eumorphidæ, Erotylidæ and Coccinellidæ in the series "Kolbenkäfer," CORDYLOCERA—LEC.]

§ In a transverse direction; this peculiar conformation of head results from the fact, that the elevated margin, under which the antennæ are inserted, is prolonged transversely just in front of the frontal stria, instead of forming the side margin of the clypeus, producing thereby such a depression of the latter as is observed in most of the species of the genus.

four exterior dorsal striæ of the elytra entire, the two inner ones abbreviated in front; the inner lateral stria only rudimental, or entirely absent. I found this European species also in South Carolina. [Not before noted as occurring in America.]

Carcinops lautus Zim.—Long. $\frac{3}{4}$ line. Oval, convex, very shining piceous. antennæ and legs ferruginous; head and prothorax finely sparsely punctured, punctures of different sizes; marginal stria of prothorax very fine, scarcely obvious in front; elytra with the sutural stria feeble, composed only of separate punctures, and abbreviated in front, five dorsal striæ entire, slightly curved inwards, and distinctly punctured; the inner lateral stria is well developed, and finer than the dorsal striæ; pygidium and propygidium smooth; mesosternum deeply emarginate in front, and surrounded by a fine stria; front tibiæ 2-toothed.—North Carolina.

Carcinops troglodytes Mars.—[Under this name he notes the species which is not uncommon in the Southern States, and which is usually regarded as *Paromatus pumilio* Er.]

ECHINODES Zim.—An intermediate form between *Erectmotus* and *Heterius*, and easily distinguished from the latter by the large, long, broad, and concave mental lobe, (Kinnlappen).

E. setiger.—*Heterius setiger* Lec. Proc. Acad. Nat. Sc. Phil. 1859, 316.—I found this insect on April 13th, in the nest of a small brown ant at Columbia, S. Carolina.

PACHYLOPUS Er.—These insects differ from *Saprinus* by their incrassated thighs, and by the club shaped, thickened middle and hind tibiæ being densely clothed with spines. In the form of the head they agree with the first division of *Saprinus*; the prothorax is large and smooth, or at least only punctured along the hind-margin.

The following divisions may be established:

- A. Upper surface smooth:
 - a. Prosternum forming a strong acute keel.—(*P. dispar*, Africa.)
- B. Upper surface punctured:
 - b. Prosternum strongly carinate, margined only near the base, which is broader.—(*P. sulcifrons*, *serrulatus*.)
 - c. Prosternal striæ equally apparent at the base, but converging at the middle into a longitudinal line.—(*P. palmatus*.)
 - d. Prosternal striæ closely approximate, but separate to the apex.—(*P. dimidiatus* of Europe.)

Epierus novellus Zim.—Long. 1 line. Smaller and narrower, and more parallel in form than *nigrellus*, piceous, with ferruginous antennæ and legs, very finely and thickly punctured, somewhat more coarsely upon the prothorax than the elytra; the striæ entire, fine but well impressed, and also regularly curved; the two inferior marginal striæ feeble and slightly punctured; pygidium flat, and like the propygidium, thickly and strongly punctured.—Carolina.

Epierus planulus Er.—Columbia, Mexico, California. LeConte has described (Ann. Lyc. Nat. Hist. New York, V, 164) this species under the name *decipiens*. The order of names given in his List, p. 28, is incorrect. [By a typographical error the synonym *decipiens* has been placed after *vicinus* Lec. instead of *planulus* Er.,

Paromalus affinis Lec.—Usually larger than *aqualis*, and more narrowed behind; easily distinguished by the pygidium, which is larger and more convex, sculptured only with fine reticulated aciculate lines; these are especially obvious in the male, but in the female are less marked, and sometimes entirely wanting. In both sexes of *aqualis* the pygidium is alike, and covered with coarse tubercles and deep rugosities.

Plegaderus Erichsonii Lec., List of Col. N. Am. (Smiths. Inst.) p. 28.—*P. pusillus* ‡ Lec. Bost. Jour. Nat. Hist.—Less than $\frac{1}{2}$ line long. Pale or dark piceous, with ferruginous antennæ, and reddish-brown legs. Head and prothorax finely punctured, the latter with a deep lateral impressed line, and convex elevated margin, disc without transverse groove, but in place of it, in certain lights, a very faint transverse impression may be observed; elytra distinctly punctured, and with very fine and short hairs. Abundant in Carolina, in November under pine bark.

The species of *Plegaderus* may be divided into three groups:

- a. Disc of prothorax with a deep transverse groove, and the prosternum with a patch of hair.—(Most of the species, including *transversus*.)
- b. Disc of prothorax without transverse groove, but prosternum with a patch of hair.—(*Erichsonii*.)
- c. Disc of prothorax without transverse groove, and prosternum without patch of hair.—(*pusillus* of Europe.)

Aulonium ferrugineum. *—Length $1\frac{1}{2}$ line. Ferruginous, more slender than *parallelipipedum*; head distinctly punctured, with two elevations on the front, and one fovea. Prothorax much longer than wide, and as well as the elytra, very finely and sparsely punctured; the two inner longitudinal ridges are strongly elevated, and extended in a tooth like prolongation over the apical margin which therefore appears emarginate; the intermediate spaces on each side of the middle striæ are convex, the middle striæ approach each other in front and diverge curvilinearly behind; elytral rows of punctures very fine.—Carolina.

[**Lasconotus**] **referendarius** Zim.—Length almost 1 line, somewhat narrower than [*pusillus* Lec.], colored, punctured and pubescent in the same manner, but quite different in the prothorax. The dorsal costæ are in fact ill-defined, and only faint traces of two fine lines can be perceived in the deep longitudinal impression; on the elytra the 4 costæ next the suture are distinctly elevated, the first costa reaches the tip, the fourth is obsolete in front; between the costæ are two rows of coarse punctures.

Colydium lineola Say.—Probably *longiusculum* Say is not different from this species, from which it ought to differ by the absence of the medial dorsal line of the prothorax; since no other author mentions such a species, we might suppose that its description by Say has originated in some error.

PROLYCTUS Zim.—[Under this name he establishes for *Bothrideres caratus* Mels., a separate genus, having the following characters.] These insects differ from the genuine *Bothrideres*, with which they are often confused, by the short thick head, and transversely elongate

[* No extracts from the MS. of Nitidulidæ are here made, because a Monograph of the family by Mr. A. Murray is now in progress.]

eyes. The prothorax and elytra are furnished with longitudinal costæ, but the antennæ, palpi, coxæ, and terminal spine of the front tibiæ are as in *Bothrideres*

MYCHOCERUS Er.—Very small insects, which in external structure have a general resemblance to *Cerylon*, but with the head so deeply retracted into the prothorax, that the genus cannot be properly referred to the same tribe, but must rather be reckoned as belonging to a separate tribe of the same family, **DERMESTIDÆ**.

The clypeus is separated from the front by an evident suture; the mandibles, palpi and labrum very short; the first two joints of the antennæ are thick, the 10th forms * a rounded club, received in a deep fovea of the prothorax; the latter is transverse, and shaped almost as in the *Anthreni*; scutellum very small. Elytra covering all the dorsal segments. Under surface flat, with broad sterna, and therefore all the coxæ widely separated; the prosternum separated from the lateral depressed parts by a longitudinal carina, prolonged in front so as to cover the mouth; first ventral segment as large as the other four together; tarsi slender 4-jointed.

M. [depressus.—*Murmidioides depr.* Lec. Proc. Acad. Nat. Sc. 1866, 376.] Length $\frac{1}{2}$ line. Elliptical, slightly convex above, ferruginous, with yellow legs; under a high lens the upper and under surface appear very finely punctured, and covered with fine pubescence. Prothorax transverse, twice as wide as long, with obtuse front angles, upon which the antennal foveæ are situated; the hind margin forms an obtuse angle at the middle, from which to the sides it is feebly emarginate, the hind angles are acute, the sides converge obliquely in front, flat, not deflexed, very finely margined, somewhat impressed near the hind margin. Elytra very distinctly punctate-striate, in front as wide as the prothorax, and closely affixed to it, behind rounded.—South Carolina.

[I have been thus particular in translating the whole of Dr. Zimmermann's description, because on renewed examination of the specimens I find that they differ from *Murmidioides* generically by the antennal foveæ being upon the anterior angle of the prothorax extending below, instead of above them as in *Murmidioides*, in which they occupy the dorsal surface just by the angle. Nevertheless, in comparing the two species before me which represent the two genera, I cannot but be convinced that they are closely allied, and that their affinities are rather with *Histeridæ* than *Cerylon*; nor in fact do I perceive any essential generic distinction, apart from the one above mentioned and minor differences in the antennæ, except that the prosternal striæ are more distant, and the anterior lobe less developed in *Mychocerus* than in *Mur-*

* According to Erichson's description; I have not been able to draw out the antennæ so as to count the number of joints.

midius. The antennæ are well displayed in the two specimens given me by Mr. Ulke, and show that the 1st joint is much broader than the 2nd, though the latter is thicker than the following ones, the 1st is not so elongated as in *Murmilius*; the tibiæ are narrower, and the legs somewhat less retractile. The pro- and meso-sternum fit closely together in both genera, precisely as in the Histeridæ, with which in all the characters mentioned they show a strong affinity, and no resemblance at all to *Corylon* or its allies.]

Corticaria denticulata Mann., Germ. Zeitschr. v, 23.=*Lathridius dent.* Gyll. iv, 126.—Common to Europe and North America.

Corticaria serrata Mann. ibid. v, 28.=*Dermestes serr.* Payk. Fauna. i, 300.=*Lathridius serr.* Gyll. iv, 126.—Europe and North America. To this species without doubt belong *C. denticulata* Kirby, Fn. Bor. Am. iv, 110, and *Lathr. 8-dentatus* Say, Journ. Ac. Nat. Sc. Phila. iii, 325.

Corticaria elongata Gyll. iv, 130, (*Lathr.*)—Europe and North America.

Corticaria pusilla Mann. Germ. Zeitschr. v, 48.—North America, from South Carolina to California.

[This is the species which I described under the name *rugulosa*; it is very abundant at Lake Superior, but is not found in California, the specimens so labelled in Dr. Zimmermann's collection were sent to him by me, and were collected on point Kewenaw.]

Corticaria villosa Zim.—Length $\frac{3}{4}$ line. Ferruginous, nearly allied to *americana*, but the head and prothorax are more thickly punctured, and clothed with very short grayish squamiform hairs, the transverse impression of the prothorax is less deep, the elytra with unusually long hairs, and also more densely pubescent on the intervals, so that viewed sideways they appear clothed with a silky covering.

Corticaria subimpressa Zim.—Length $\frac{3}{4}$ line. Ferruginous with brownish elytra; front much broader than in *americana*, with very fine scattered punctures. Prothorax a little broader than the head, transversely quadrate, moderately convex, very finely punctured, hind margin slightly rounded, hind angles acute, prominent, front angles rounded, disc in front of the base with a feeble transverse impression, which sometimes is scarcely visible, usually however composed of three foveæ of which the lateral ones extend to the side margin, and the middle one appears punctiform. Elytra finely punctate-striate, and in the striæ and upon the intervals furnished with short gray squamiform hairs arranged in rows.—North America.

C. similata and *subtilis* Mannh. are allied to this species.

Lathridius rugicollis Mannh. Germ. Zeitschr. v, 77.=*Ips rug.* Oliv. ii, 18, 13, tab. 3, fig. 19.—Europe and North America.

[This is the species I described under the name *L. reflexus* (Proc. Ac. Nat. Sc. Phil. vii, 304.)

Silvanus bicornis Rosenh.—Found both in Europe and America. This species closely resembles *S. surinamensis* in form, color, size and sculpture, and differs only by the elevated side margin of the front terminating anteriorly in a

small elevated tubercle, or little horn. Since this insect occurs wherever *S. surinamensis* is found, it may be only a variety of the latter, though much less common. Both forms occur in either sex, the males being distinguished in both species by the toothed hind thighs.

Lathropus vernalis Zim.—[This name is given to the species mentioned by me, Proc. Acad. Nat. Sc. Phila. 1866, 379, but the characters by which it is to be distinguished from the European *L. sepicola* are not pointed out. Comparison of specimens is therefore still necessary.]

Nausibius major Zim.—Length 2—2½ lines. Of the same form as *N. dentatus*, but somewhat larger, of black color, with reddish-brown antennæ and legs, and perceptibly more coarsely punctured.—Carolina. This species is found only under the bark of old oaks.

Læmophlæus testaceus.—*Cucujus test.* Fabr. &c.—Europe and North America. [Not before noted as common to the two continents; I described it as *L. Zimmermanni*.]

Læmophlæus pusillus.—*Cucujus pus.* Schœnherr.—*C. minutus* Oliv.—Europe, Africa, North and South America. [Not before noted as occurring in the United States.]

Læmophlæus alternans Er.—Europe and North America. [Not before observed in the United States; neither of these species were in my collection.]

Cryptophagus croceus Zim.—Length 1—1½ line. Ferruginous, coarsely punctured, clothed with long hair, moderately broad and convex. Prothorax with the lateral teeth directed more upwards than outwards, therefore appearing less prominent than they really are; the outer surface of the front tooth highly polished, convex and circular; elytra with punctures arranged in rows; antennal club unusually thick.—South Carolina.

Cryptophagus crinitus Zim.—Length 1—1½ line. Ferruginous, thickly, tolerably strongly punctured, punctures placed without order, pubescence short. On the prothorax only the two front elevations are visible, the side margin is narrowly reflexed and the lateral teeth are very obtuse, the front tooth has a highly polished rounded surface which is impressed in the centre. Elytra with two fine striæ each side of the suture, which are abbreviated in front; antennal club unusually thick.—South Carolina [and Illinois.]

Cryptophagus fungicola Zimm.—Length 1 line. Ferruginous, finely and thickly punctured, clothed with prostrate gray hairs; marginal teeth of the prothorax scarcely visible, and the polished spots of the front angle very narrow; the four elevations and the little fold at the base are quite evident; antennal club small.—Carolina.

[This and the two preceding species belong to the division of the genus in which the prothorax has more or less evident smooth elevations, and a very short elevated ridge at the middle of the base; in the next species no such inequalities of the surface are apparent, and the disc is regularly convex.]

Cryptophagus nodulanguis Zim.—Length 1 line. Ferruginous, very shining, finely and equally but not closely punctured, clothed with prostrate yellow hair; prothorax altogether evenly convex, distinctly bidentate on the sides, the front tooth not planed down, but convexly protuberant.—Middle and Southern States.

ATOMARIA.—The species of this genus are numerous, thus far found only in the northern temperate zone; the following divisions may be recognized:

- A. Prothorax with the lateral margin double; 1st joint of the antennal club conspicuously smaller than the other two:
 - a. Prothorax feebly bisinuate at base.....**ferruginea, testacea.**
- B. Prothorax with single lateral margin; all three of the joints of the antennal club of nearly equal size:
 - b. Prothorax feebly bisinuate at base.....**ochracea.**
 - c. Prothorax not sinuate at base**ephippiata.**

Atomaria testacea Zim.—Length $\frac{3}{4}$ line. Ferruginous, smaller than *A. ferruginea*, more strongly punctured, with the pubescence thinner and shorter; upper surface shining, prothorax distinctly broader than long, with rounded sides and distinct hind angles.—South Carolina.

Atomaria ochracea Zim.—Length $\frac{3}{4}$ line. Rounded oval, ferruginous or pale brown, moderately shining, very finely and thickly punctured and clothed with very short pubescence; head scarcely visibly punctured, prothorax transverse, very convex, in front much narrower than behind, sides rounded; elytra broadest before the middle. I found this species in Maryland, in copula, in September.

Atomaria ephippiata Zim.—Length $\frac{3}{4}$ line. Black, antennæ legs, anus, and elytra ferruginous yellow, the last with a large black spot, at the middle, which extends from the side margin to the suture, near which it is very much narrowed thus forming an irregular transverse band; upper surface sparsely clothed with fine silvery pubescence. Prothorax and elytra very convex, so that in a side view the dorsal is as great as the lateral curvature, which is greater in this than in the other species, the puncturing of the prothorax is finer and closer than that of the elytra.—Middle States. [A common species resembling the Californian *A. latula* Lec., but larger and more convex, and differently colored.]

Anthrenus museorum.—[Dr. Zimmermann notes this common European insect as found in North America; I have not as yet seen any native specimens.]

Anthrenus adspersus Herbst.—[Dr. Zimmermann considers this species the very common insect generally known as *A. castaneæ* Mels.]

HADROTOMA Er.—[Dr. Zimmermann refers to this genus the insect described by me as *Dearthrus longulus*, New Spec. Col. (Smiths. Inst.) 73, with the remark that the antennæ properly consist of but ten joints, which agrees with the description given by Duval, Gen. Col. Eur. ii. 256; I was misled by the original description of Erichson (Ins. Deutschl. iii. 444,) in which this important character is not noticed, and proposed for our native species a new genus.]

BYRRHUS.—[In this genus, as defined by Dr. Zimmermann, are included 3 divisions or groups of species, *Microchætes*, *Syncalypta* and *Curimus*, in which all the tarsi are retractile into tibial groves and the body clothed with erect bristles; a division with 3rd tarsal joint lobed

or simple, in which no erect bristles are present, but the tarsi are also retractile into tibial grooves; and 3rd those in which only the anterior tarsi are retractile, and the tarsi lobed or not, including *Cytillus*, *Morychus* and *Pedilophorus*.]

B. alternatus Say.—Nearly allied to *varius*, but comparatively longer, or according to its length narrower. Kirby observed the differences between this insect and the European *varius*; Melsheimer also distinguished it as a separate species; whether the true *varius* Fabr. is found in America is doubtful.

Stenelmis vittipennis Zim.—Length 1½ line. Similar to *sinuatus*, but somewhat broader, and less convex; above blackish-gray, antennæ, tarsi, abdomen, and head of prothorax, ferruginous; prothorax longer than wide, scarcely narrowed in front, with parallel sides, long and pointed front angles and slightly elevated dorsal costæ; elytra punctate-striate, the inner intervals broader than in *sinuatus*, 3rd tolerably flat in front, and only the 6th costiform.—S. Carolina.

Stenelmis linearis Zim.—Length 1 line. Slender, head, prothorax and scutellum dark bronzed; elytra shining black, with a broad yellow vitta, which begins on the humeral angle, then runs inside of the elevated costa of the 6th interval, nearly to the tip; under surface and thighs blackish-gray, with bluish and silvery reflections; antennæ, tibiae and tarsi ferruginous, front and prothorax with a shining black longitudinal groove; prothorax elongate, scarcely narrowed in front, with very feeble longitudinal ridges; elytra deeply punctate-striate, with the 6th interval feebly elevated; middle tibiae on the inner side finely toothed at the middle.

LIMNIUS.—These species exhibit an intermediate form between *Stenelmis* and *Elmis*; from the former they differ by the pubescent spot on the inner side of the tibiae, from the latter by the round scutellum. In the structure of the elytra, they have the narrow inflexed side margin in common with *Stenelmis*, but differ in a less degree, since the costiform elevation, which in *Stenelmis* is always the 6th interval, here belongs to the 5th, (the space between the suture and the 1st dorsal being counted as the 1st interval.)

L. pusillus.—*Stenelmis pusillus* Lec., Proc. Acad. Nat. Sc. Phila. vi. 44.

PARNUS.—[In this genus, as here defined, are included as divisions, *Potamius* (*Dryops* Leach), *Parygrus* and *Pelonomus*.]

Psephenus trentonensis Zim.—Length 2½ lines. Nearly allied to *Lecontei*, but darker in color, blackish-gray, only the base of the thighs, the tarsi and the indexed margin of the elytra ferruginous-yellow; prothorax almost semi-circular, the sides and apex, without prominent front, forming a common curve; base deeply bisinuate, with flat hind angles.—Trenton Falls, N. Y.